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IMPROVEMENT OF LONGITUDINAL LEFT VENTRICULAR STRAIN IS ASSOCIATED WITH LEFT ATRIAL STRAIN ENHANCEMENT AFTER PULMONARY-VEIN ISOLATION FOR ATRIAL FIBRILLATION

ACC Poster Contributions
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Background: Pulmonary-vein isolation (PVI) is reported to improve longitudinal and circumferential left ventricular (LV) systolic function in patients with atrial fibrillation (AF). We hypothesized that PVI for AF improves longitudinal left ventricular (LV) function via enhancement of left atrial (LA) longitudinal strain early after PVI.

Methods: Forty consecutive AF patients who were treated with pulmonary-vein isolation (PVI) with radiofrequency catheter ablation were examined before and after PVI (day 2,3,4,7,and 30). In addition to routine echocardiographic assessment, LV global longitudinal strain from apical views and LV global circumferential strain from short-axis view of papillary muscle level were monitored. LA longitudinal strains from apical views were also examined.

Results: The longitudinal LV strains had been gradually improved after PVI. These improvements were independent with the progression of transmitral late diastolic flow velocity (TMF-A velocity: booster pump function). Multivariate analysis demonstrated that the % change in longitudinal LA systolic strains were most powerful predictors of % change in longitudinal LV strain (R=0.49~0.75, P<0.0001).

Conclusion: Improvement of longitudinal LV strain is associated with the enhancement of longitudinal LA strain early after PVI in patients with AF.